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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,727	08/25/2006	Kazuto Nagata	2729-0117PUS1	2537

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BIRCH STEWART KOLASCH & BIRCH  
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FALLS CHURCH, VA 22040-0747

EXAMINER
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KATAKAM, SUDHAKAR

ART UNIT	PAPER NUMBER
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1621

NOTIFICATION DATE	DELIVERY MODE
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07/14/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,727	<b>Applicant(s)</b> NAGATA ET AL.	
	<b>Examiner</b> SUDHAKAR KATAKAM	<b>Art Unit</b> 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 32-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 32-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Status of the application***

1. Receipt of Applicant's Remarks and Arguments filed on 21 May 2010 is acknowledged. However, the arguments for the rejections are not found persuasive and as such, the previous rejections have been maintained for the reasons of record made on made on 22 Jan 2010.

### ***Response to Arguments***

2. Applicant's arguments filed on 21 May 2010 have been fully considered but they are not persuasive.

*The examiner acknowledges applicants' argument that the chemical compound described in **Minakata et al** is a polyacene compound, and it is not a hydroxypolyacene derivative, the chemical structure recited in claim 32 is completely different from the chemical structure of the chemical compound described in **Minakata et al**.*

The examiner contends, however, that applicants claim the compound of formula (IV), which is a hydroxypolyacene derivative. The preamble does not have any weight in the claim language. Therefore, the compound of **Minakata et al** anticipates applicants' compound of formula (IV).

*The examiner acknowledges applicants' argument that in **Minakata et al**, a polyacene compound having a functional group, such as an alkyl group and others, and a polyacene compound having a fluorine atom are described. However, a polyacene compound having both a functional group, such as alkyl*

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*and others, and a halogen group is not described in **Minakata et al.** Also **Minakata et al** fails to disclose improving oxidation resistance by introducing a halogen group.*

The examiner contends, however, that **Minakata et al** fairly suggested generic structural component of applicants claimed compound, and also various possible functional groups on the polyacene, axis directions and their properties [col.3, lines 16-65]. For example, introduction of a functional group that is photoreactive and photopolymerizable, in the particular, into a polyacene will make the polyacene photosensitive, and this compound is useful as a light patterning material [col.3, lines 41-40]. This suggests art already established the fact that the polyacene properties are highly sensitive to the substituted functional groups, such as chlorine or alkyl or combination, present on the ring. By looking at these teachings, i.e., various possible functional groups disclosed by **Minakata et al** and their properties, a skilled person in the art immediately recognizes and motivated to develop polyacene with combinations of various functional groups.

The above examiner's response is also applies to applicants filed declaration.

*The examiner acknowledges applicants' argument that **Sparfel et al** fail to disclose a pentacenediol having both functional groups, such as alkyl group and others, and a halogen group.*

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The examiner contends, however, that **Sparfel et al** fairly teach core structure of applicants' claimed precursor. However, claims are not required both alkyl group and halogen group on the ring core structure. Nevertheless, in the precursor, the R<sub>1</sub>-R<sub>4</sub> groups are not reactive groups in the formation of polyacene. If the groups are alkyl or halogen, then they simply carry over to the product.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 32 is rejected under 35 U.S.C. 102(b) as being anticipated by **Minakata et al** (WO 2003016599 A1) for the reasons set forth in the office action on 22 Jan 2010.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-21 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Minakata** (US 7,061,010 B2) for the reasons set forth in the office action on 22 Jan 2010.

8. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Sparfel et al** (Tetrahedron, 1980, 36(15), pages 2225-35) for the reasons set forth in the office action on 22 Jan 2010.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136 (a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no even, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhakar Katakam whose telephone number is 571-272-9929. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sudhakar Katakam/  
Examiner, Art Unit 1621